

Figure 1A

360

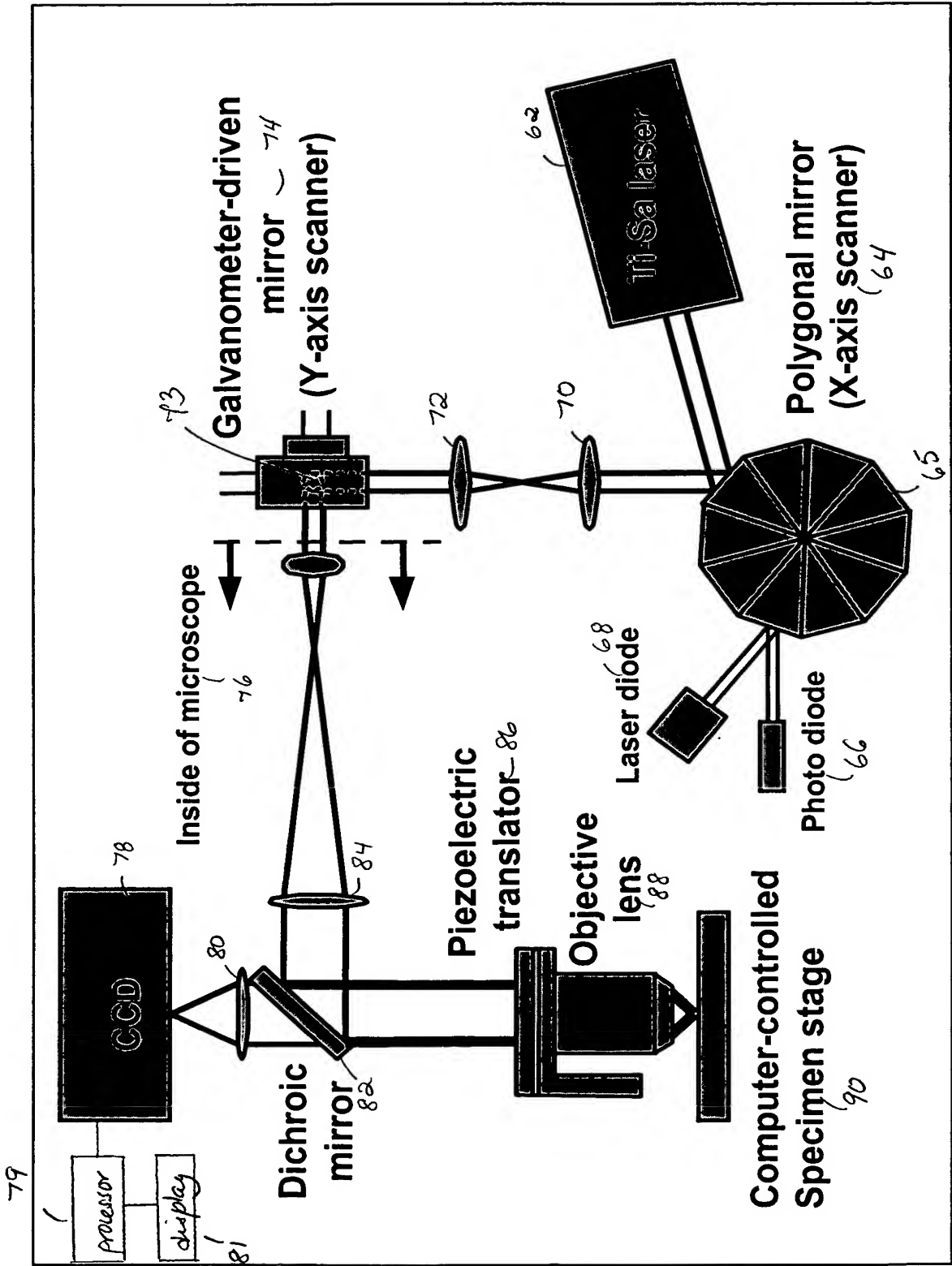


Figure 1B

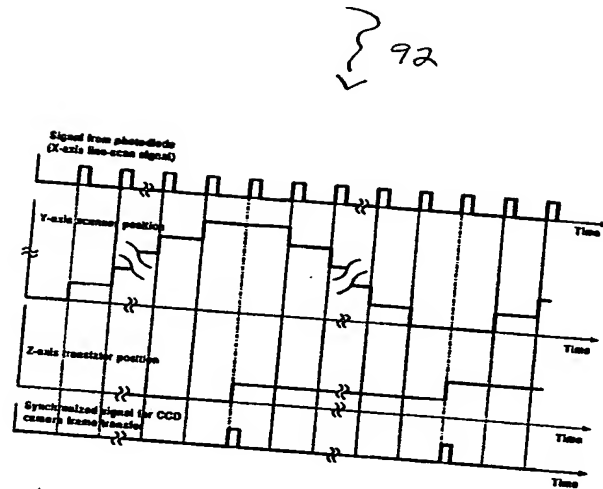
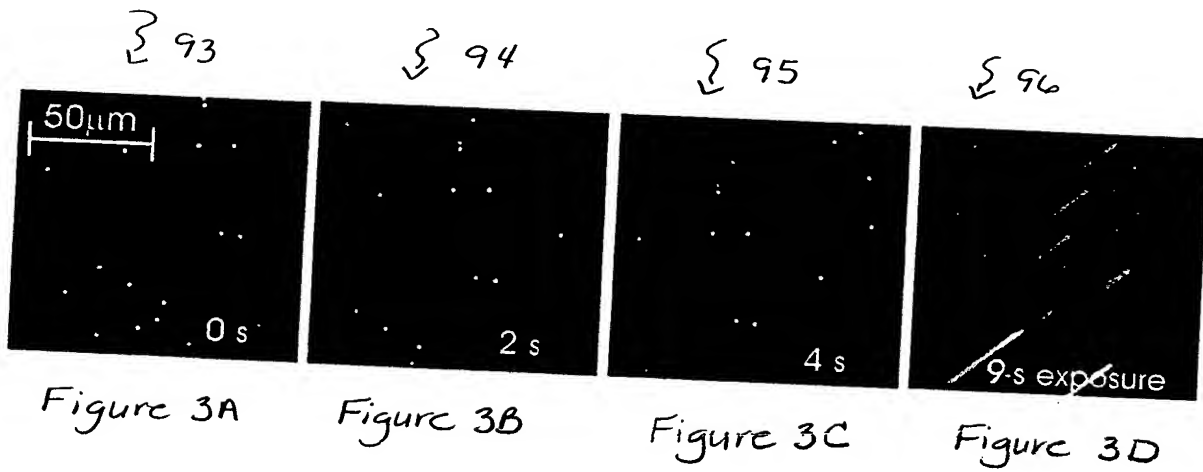


Figure 2



{ 97

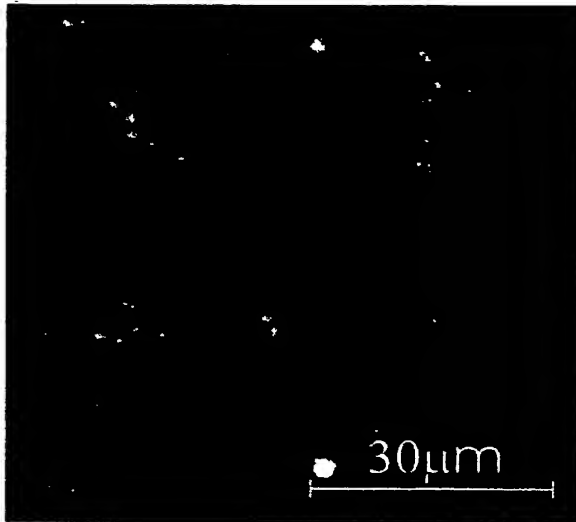


Figure 4A

{ 98



Figure 4B

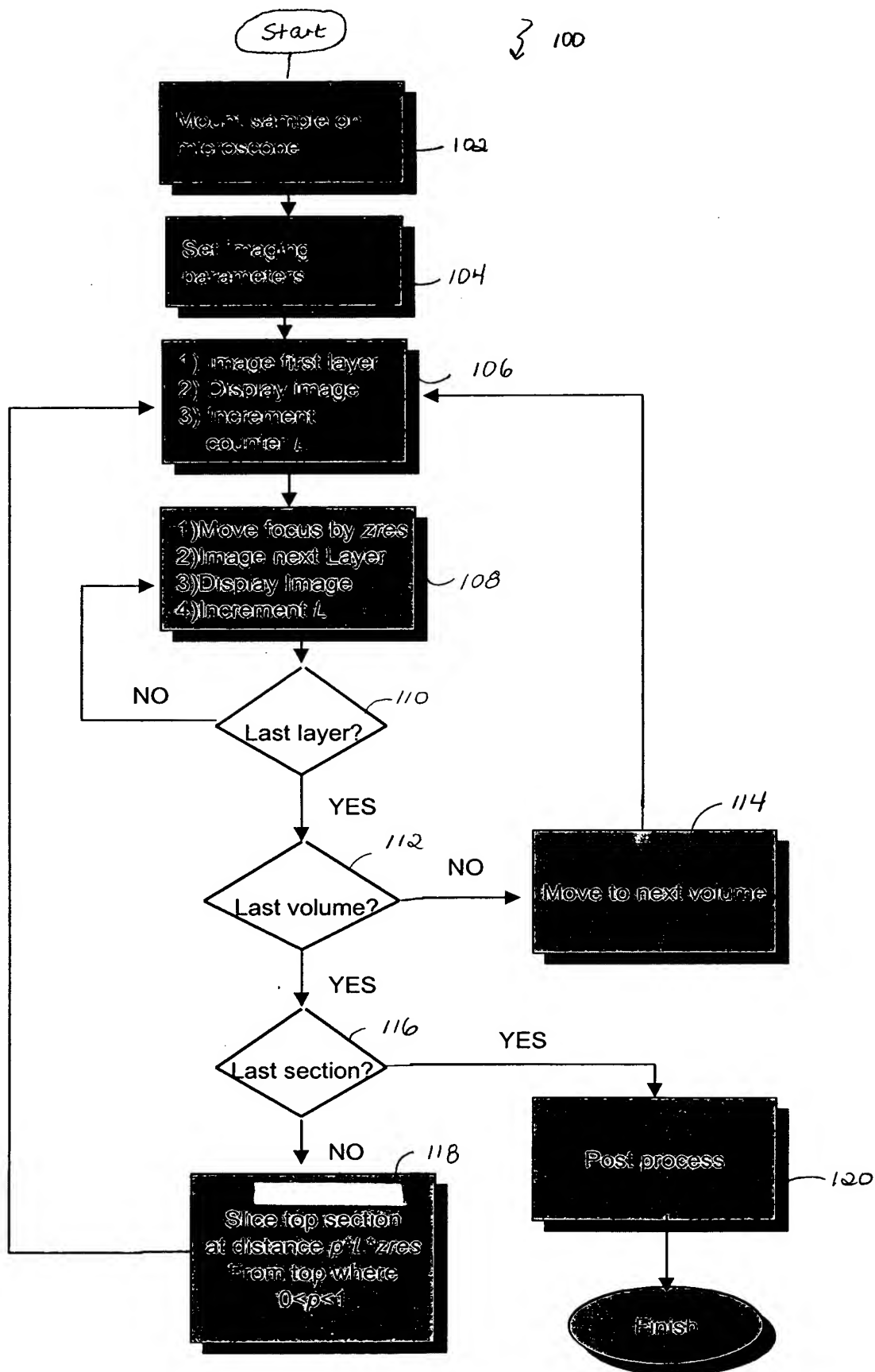


Figure 5

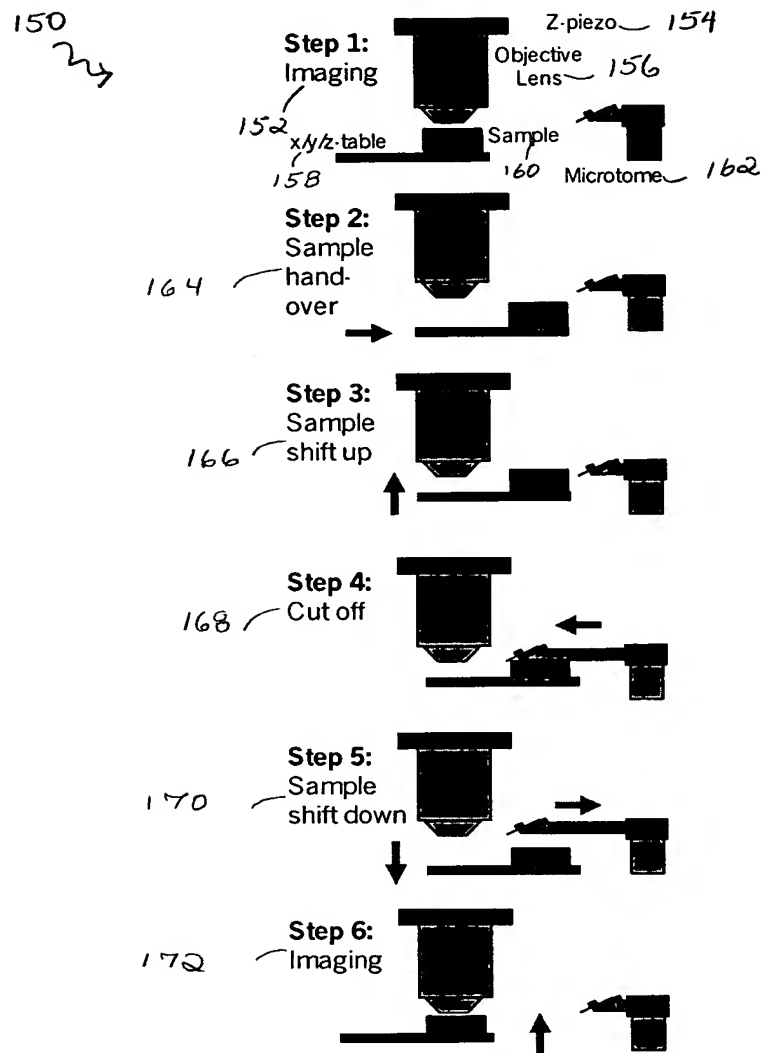


Figure 6

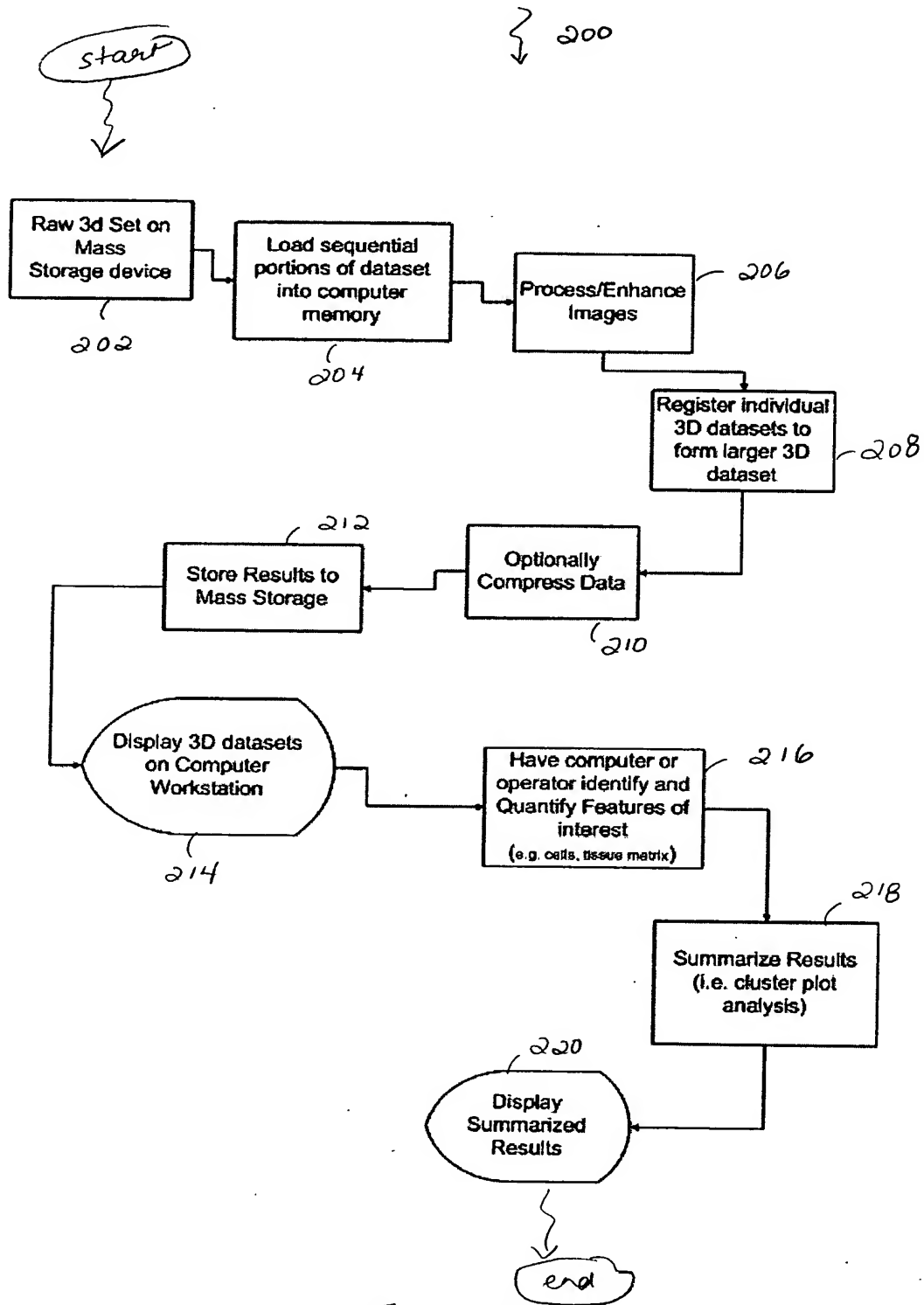


Figure 7

Figure 8A

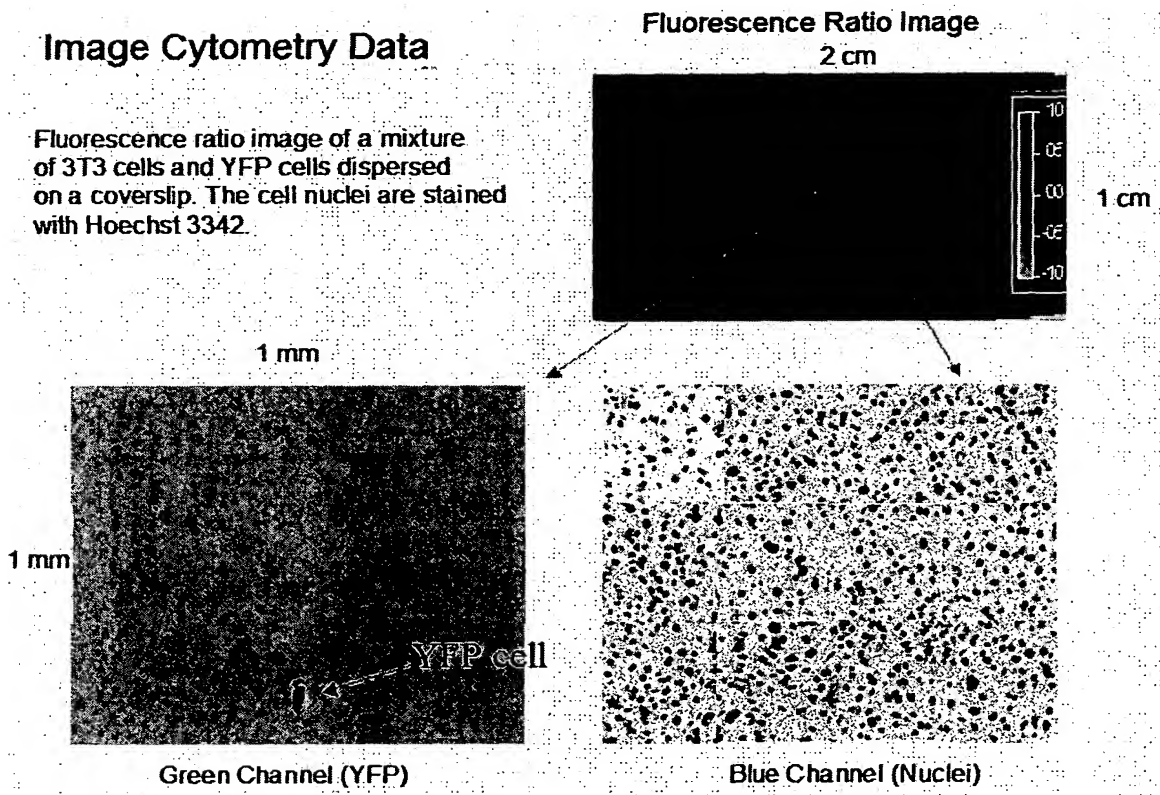


Figure 8B

Figure 8C

High Resolution Volumetric Imaging of Mouse Brain

A mouse was genetically engineered to co-express GFP along with actin in the brain. The brain was excised and then fixed in 4% paraformaldehyde and then embedded in paraffin.

Imaging Parameters:

1 μm xy resolution; 3 μm z resolution

Eighteen 60 μm microtome sections

Imaging Time: 45 minutes

Approximately 1×10^5 cells

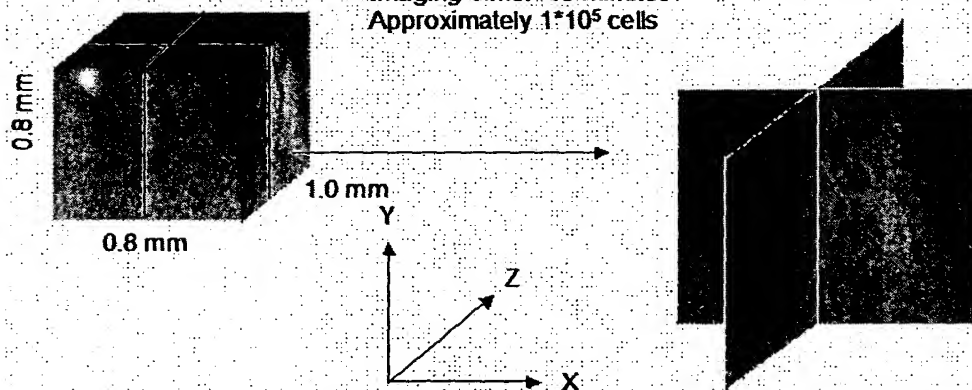


Figure 9A

Figure 9B

Data Analysis

A segmentation of the images is performed and the nuclei are categorized by several parameters:

Parameter Set

- 1) Nuclear Area
- 2) Nuclear Circularity
- 3) Fluorescence Ratio
- 4) YFP (green channel) intensity

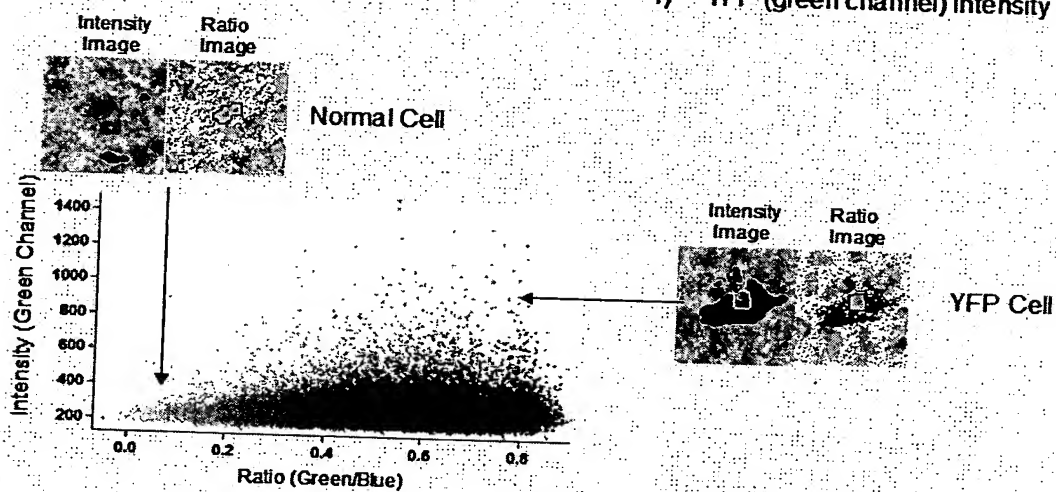


Figure 10

Figure 11A



Figure 11B

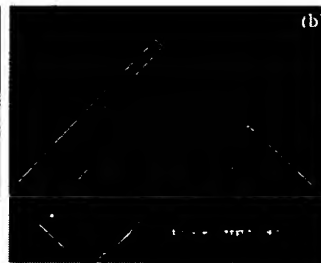


Figure 11C



Figure 11D



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Title: Systems and Methods for Volumetric Tissue Scanning
Microscopy

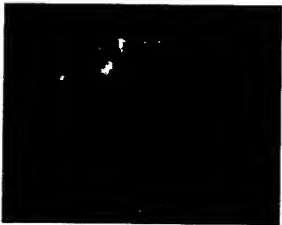


Figure 12A



Figure 12B



Figure 12C



Figure 12D



Figure 12E

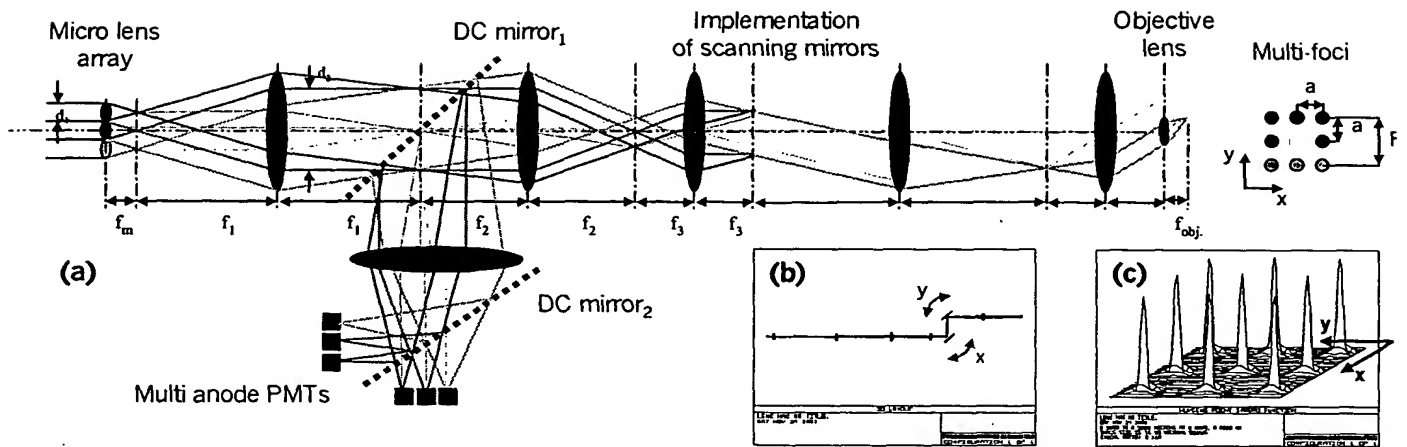
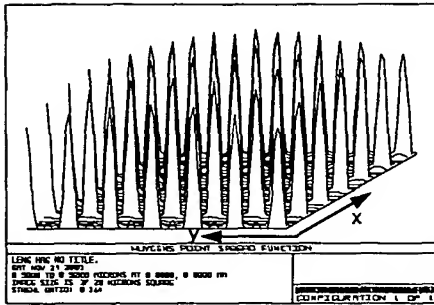


Figure 13A

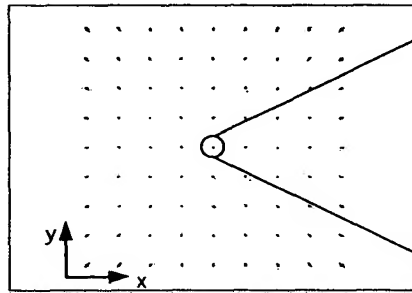
Figure 13B

Figure 13C



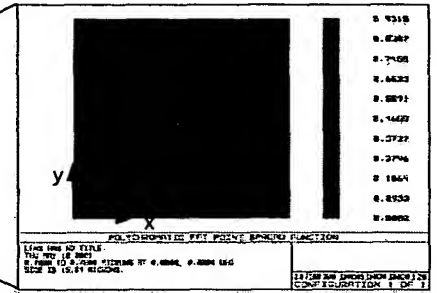
(a)

Figure 14A



(b)

Figure 14B



(c)

Figure 14C